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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/634,507

08/05/2003

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82478-0100

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21611

7590

10/30/2006

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EXAMINER

GERGISO, TECHANE

ART UNIT

PAPER NUMBER

2137

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/634,507	Applicant(s) KAWAMURA ET AL.	
	Examiner Techane J. Gergiso <i>T-6</i>	Art Unit 2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08/05/2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-12 have been examined.
2. Claims 1-12 are pending.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 10, 11, and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 10, 11, and 12 recite "a plurality of keys used for encrypting **and/or** decrypting data streams" (page 39, lines 3-4; page 42, lines 3-5; page 43, lines 4-5 and lines 3-4). The "and/or" is an ambiguous and is not specific to define the scope of the claims. Therefore claims 1, 10, 11, and 12 are indefinite.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1, 2 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted prior art by applicant (hereinafter referred to as Admission) in view of Yamamoto et al. (hereinafter referred to as Yamamoto, US. Pat. No.: 6, 307, 940).

As per claim 1:

Admission discloses a parallel stream operation apparatus, comprising:

an input stream processing unit operable to receive a plurality of data streams in parallel, and output each data stream to a corresponding one of the paths (figure 1: 1621, 1601-1605; page 2: lines 6-19; page 3: lines 15-25); and

an operation unit operable to decrypt or encrypt each data stream with a corresponding one of the keys (figure 1: 1661; page 3: lines 19-25).

Admission discloses a different one of a plurality of keys used for encrypting and/or decrypting data streams (figure 1: 1631-1634). Admission does not explicitly disclose a plurality of paths. Yamamoto, in analogous art, however, discloses a plurality of paths (figure 5: 18; figure 6: 18). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system disclosed by Admission to include a plurality of paths. This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to provide a communication network, a communication terminal thereof, and a communication method thereof, in which encrypting and deciphering communication text while updating the encryption key is performed with sufficient

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secrecy maintained, and without increasing the amount of communication for updating the key as suggested by Yamamoto in (column 5: lines 25-35).

As per claim 2:

Admission discloses a parallel stream operation apparatus, comprising:

an output stream processing unit operable to receive the plurality of data streams that have been decrypted or encrypted by the operation unit, and output each received data stream to a different one of a plurality of output interfaces (figure 1: 1661, 1681-1685).

As per claim 10:

Admission discloses a parallel stream operation method used in a parallel stream operation apparatus that includes a plurality of paths, each of the paths corresponding to a different one of a plurality of keys used for encrypting and/or decrypting data streams, the method comprising:

an input stream processing step of receiving a plurality of data streams in parallel, and outputting each data stream to a corresponding one of the paths (figure 1: 1621, 1601-1605; page 2: lines 6-19; page 3: lines 15-25); and
an operation step of decrypting or encrypting each data stream with a corresponding one of the keys (figure 1: 1661; page 3: lines 19-25).

Admission does not explicitly disclose a plurality of paths. Yamamoto, in analogous art, however, discloses a plurality of paths (figure 5: 18; figure 6: 18). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system disclosed by Admission to include a plurality of paths. This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to provide a communication network, a communication terminal thereof, and a communication method thereof, in which encrypting and deciphering communication text while updating the encryption key is performed with sufficient secrecy maintained, and without increasing the amount of communication for updating the key as suggested by Yamamoto in (column 5: lines 25-35).

As per claim 11:

Admission discloses a parallel stream operation program executed in a computer in a parallel stream operation apparatus that includes a plurality of paths, each of the paths corresponding to a different one of a plurality of keys used for encrypting and/or decrypting data streams, the program comprising:

an input stream processing step of receiving a plurality of data streams in parallel, and outputting each data stream to a corresponding one of the paths; and an operation step of decrypting or encrypting each data stream with a corresponding one of the keys (figure 1: 1621, 1601-1605; page 2: lines 6-19; page 3: lines 15-25).

Admission does not explicitly disclose a plurality of paths. Yamamoto, in analogous art, however, discloses a plurality of paths (figure 5: 18; figure 6: 18). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system disclosed by Admission to include a plurality of paths. This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to provide a communication network, a communication terminal thereof, and a communication method thereof, in which encrypting and deciphering communication text while updating the encryption key is performed with sufficient secrecy maintained, and without increasing the amount of communication for updating the key as suggested by Yamamoto in (column 5: lines 25-35).

As per claim 12:

Admission discloses a television reception apparatus, comprising: a plurality of paths, each corresponding to a different one of a plurality of keys used for encrypting and/or decrypting data streams; an input stream processing unit operable to receive a plurality of data streams in parallel; and output each data stream to a corresponding one of the paths; and an operation unit operable to decrypt or encrypt each data stream with a corresponding one of the keys (figure 1: 1621, 1601-1605; page 2: lines 6-19; page 3: lines 15-25; figure 1: 1661; page 3: lines 19-25).

Admission does not explicitly disclose a plurality of paths. Yamamoto, in analogous art, however, discloses a plurality of paths (figure 5: 18; figure 6: 18). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify

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the system disclosed by Admission to include a plurality of paths. This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to provide a communication network, a communication terminal thereof, and a communication method thereof, in which encrypting and deciphering communication text while updating the encryption key is performed with sufficient secrecy maintained, and without increasing the amount of communication for updating the key as suggested by Yamamoto in (column 5: lines 25-35).

7. Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted prior art by applicant (hereinafter referred to as Admission) in view of Yamamoto et al. (hereinafter referred to as Yamamoto, US. Pat. No.: 6, 307, 940) in further view of Baxter III (hereinafter referred to as Baxter, US Pat. No.: 6, 865, 643).

As per claim 3:

Admission discloses the parallel stream operation apparatus, wherein the output stream processing unit includes a crossbar switch, and the parallel stream operation apparatus further comprises:

a switch control unit operable to set on or off, thereby setting a plurality of output interfaces as output destinations to which the output stream processing unit is to output the encrypted or decrypted data streams, the output interfaces being determined according to which of the paths the data streams were output to by the input stream processing unit (figure 1: 1661, 1651, 1681-1685); and

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a notification unit operable to receive each data stream from the paths, output each received data stream and the corresponding key to the operation unit, and notify the switch control unit of path information of each input data stream (figure 1, 1661, 1671, 1635).

Admission and Yamamoto do not explicitly disclose a crossbar switch. Baxter, in analogous art, however, discloses a crossbar switch (figure 5: 110, 115; column 7: lines 45-60; figure 6c: 415). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system disclosed by Admission and Yamamoto to include a crossbar switch. This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to provide high throughput, by parallel execution of certain operations that are identified, in the context of the chosen architecture, to be critical to a minimum throughput guarantee as suggested by Baxter in (column 3: lines 20-34).

As per claim 4:

Admission discloses a parallel stream operation apparatus, wherein the operation unit is one of a plurality of operation units in the parallel stream operation apparatus, and the parallel stream operation apparatus further comprises:

a notification unit operable to receive the plurality of data streams from the paths, input in parallel each of the plurality of received data streams and the corresponding key

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to a different one of the operations units, and notify each operation unit of path information of the data stream input to the operation unit (figure 1, 1651); and a selection control unit operable, for each of the encrypted or decrypted data streams output from the output stream processing unit, to select, according to the path information of the data stream, an output interface as an output destination of the data stream (figure 1: 1671).

As per claim 5:

Yamamoto discloses a parallel stream operation apparatus, wherein the input stream processing unit outputs one of the data streams to two of the paths, and one of the two paths is connected to the operation unit, and the other of the two paths is directly connected to the output stream processing unit (column 16: lines 22-40).

As per claim 6:

Baxter discloses a parallel stream operation apparatus, wherein the input stream processing unit has a crossbar switch, and outputs each of the data streams to the respective corresponding paths by setting switches in the crossbar on, each of the switches being at a contact point of an input line by which the data stream has been input to the input stream processing unit and an output line that is connected to a path corresponding to the key for encrypting or decrypting the data stream (figure 5: 110, 115; column 7: lines 45-60; figure 6c: 415).

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As per claim 7:

Yamamoto discloses a parallel stream operation apparatus, comprising:

a re-input path for re-inputting, into the input stream processing unit, one of the data streams that has already been encrypted or decrypted and output by the operation unit, wherein the operation unit encrypts or decrypts the input data stream that has already been encrypted or decrypted, using a key that is different to a key previously used to encrypt or decrypt the data (figure 13A: 30; DES Encryption Device).

8. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted prior art by applicant (hereinafter referred to as Admission) in view of Yamamoto et al. (hereinafter referred to as Yamamoto, US. Pat. No.: 6, 307, 940) in further view of Goff et al. (hereinafter referred to as Goff, US Pat. No.: 6,347,143).

As per claim 8:

Admission and Yamamoto do not explicitly disclose an input stream processing unit multiplexes at least two of the plurality of data streams to generate one data stream. Goff, in analogous art, however, discloses an input stream processing unit multiplexes at least two of the plurality of data streams to generate one data stream (figure 2: 55-58). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system disclosed by Admission and Yamamoto to include an input stream processing unit multiplexes at least two of the plurality of data streams to generate one data stream. This

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modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to provide

As per claim 9:

Goff discloses a parallel stream operation apparatus, wherein the input stream processing unit de-multiplexes one of the input data streams to generate a plurality of data streams (figure 1: intelligent de-multiplexer).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


See the notice of reference cited in form PTO-892 for additional prior art

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Techane J. Gergiso whose telephone number is (571) 272-3784 and fax number is (571) 273-3784. The examiner can normally be reached on 9:00am - 6:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Techane Gergiso

Patent Examiner

Art Unit 2137

October 23, 2006



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SUPERVISORY PATENT EXAMINER